

United States
Department of the Interior
Bureau of Land Management

Miles City Field Office

Continental Resources
Mulholland Federal 1-32H
APD

Environmental Assessment (EA)
DOI-BLM-MT-C020-2013-0163-EA

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BLM



**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

ENVIRONMENTAL ASSESSMENT REVIEW

OFFICE/AREA: Miles City Field Office	DOI-BLM-MT-C020-2013-163-EA
	DATE POSTED: 6/10/2013
NAME: Continental Resources Inc. Mulholland Federal 1-32H, MTM95552	DATE DUE: 6/15/2013
	FUNDING: 9141 EJ
LOCATION: SE¼SW¼, Section 32, T. 27 N., R. 56 E. Richland County, MT	

ORIGINATOR DATE/INITIALS	TITLE	ASSIGNMENT
Rick Lang	Natural Resource Specialist	Oil and Gas

REVIEWERS	TITLE	ASSIGNMENT	DATE/INITIALS
Doug Melton	Archeologist	Cultural/Paleo	06/14/13 DM Cultural Report Mt-020-13-149
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Chris Robinson	Hydrologist	Hydrology	6/19/13 CWR
Kent Undlin	Wildlife Biologist	Wildlife	6/18/13 KU
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ENVIRONMENTAL COORDINATOR

6/26/2013
DATE

ENVIRONMENTAL ASSESSMENT

EA NUMBER: DOI-BLM-MT-C020-2013-163

PROPOSED ACTION/TITLE TYPE: Continental Inc, 1 APD, Mulholland Federal 1-32H, MTM95552

LOCATION OF PROPOSED ACTION: SE¼SW¼, Section 32, T. 27 N., R. 56 E. Richland County, MT

PREPARING OFFICE: Miles City Field Office (MCFO), Miles City, MT

APPLICANT: Continental Resources Inc.

DATE OF PREPARATION: June 6, 2013

CONFORMANCE WITH APPLICABLE LAND USE PLAN: This proposed action is in conformance with the Big Dry Resource Management Plan (RMP) Record of Decision (ROD) approved in 1996. On page 14 of the ROD, it states “The BLM planning process determines availability of federal lands for oil and gas leasing where BLM is the surface management agency.”, and on page 13, “A lease grants the right to explore, extract, remove, and dispose of oil and gas deposits that may be found on the leased lands. The lessee may exercise the rights conveyed by the lease, subject to lease terms and any lease stipulations and permit approval requirements.” The proposed well would be located in an area that is open to oil and gas leasing, exploration and development (ROD, page 15). The proposed well would be drilled on existing Federal leases that do not include stipulations; however, BLM can impose requirements as part of the approved permit (ROD, page 14).

PURPOSE AND NEED: The purpose and need of this action is to determine whether to permit environmentally responsible exploration and development of the oil and gas resource within the project area, consistent with the existing leases to continue to meet the nation’s energy needs. This includes development of this project with the appropriate mitigation consistent with the goals, objectives, and decisions of the Big Dry Resource Management Plan and within the constraints of applicable policies, regulations, and laws.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

PROPOSED ACTION: The proposed well would be completed on both private and federal surface, penetrating Federal minerals. The proposed action is to build one well pad, one access road, and drill a horizontal well bore into the Bakken Formation. Once drilled, the well would be tested, and if commercial quantities of oil or gas are discovered, the locations would be completed for production. Drilling is expected as soon as all the necessary permits have been obtained (subject to any timing restrictions for the protection of wildlife). The drilling operations are expected to take approximately 30 days. The well would be drilled in full compliance with all applicable laws, regulations (43 CFR 3100), *Onshore Oil and Gas Orders*, the Application for Permit to Drill (APD) and any Conditions of Approval.

Table 1.

Well name and Number/Lease No.	Drilling Pad Footages, (acres: max cut/fill)	Access Road Footages (acres)	total
Mulholland Federal 1-32H, MTM95552	400'x450' (4.1 acres ; 17.5' / 17.3')	642.2' x 20' (0.3 acres)	4.4 acres

Access

The proposed well is approximately 7 miles south (straight-line distance) of Culbertson, Montana. Total distance from Sidney to the proposed locations using State Highways, County Roads, and the well roads is approximately 13.5 miles.

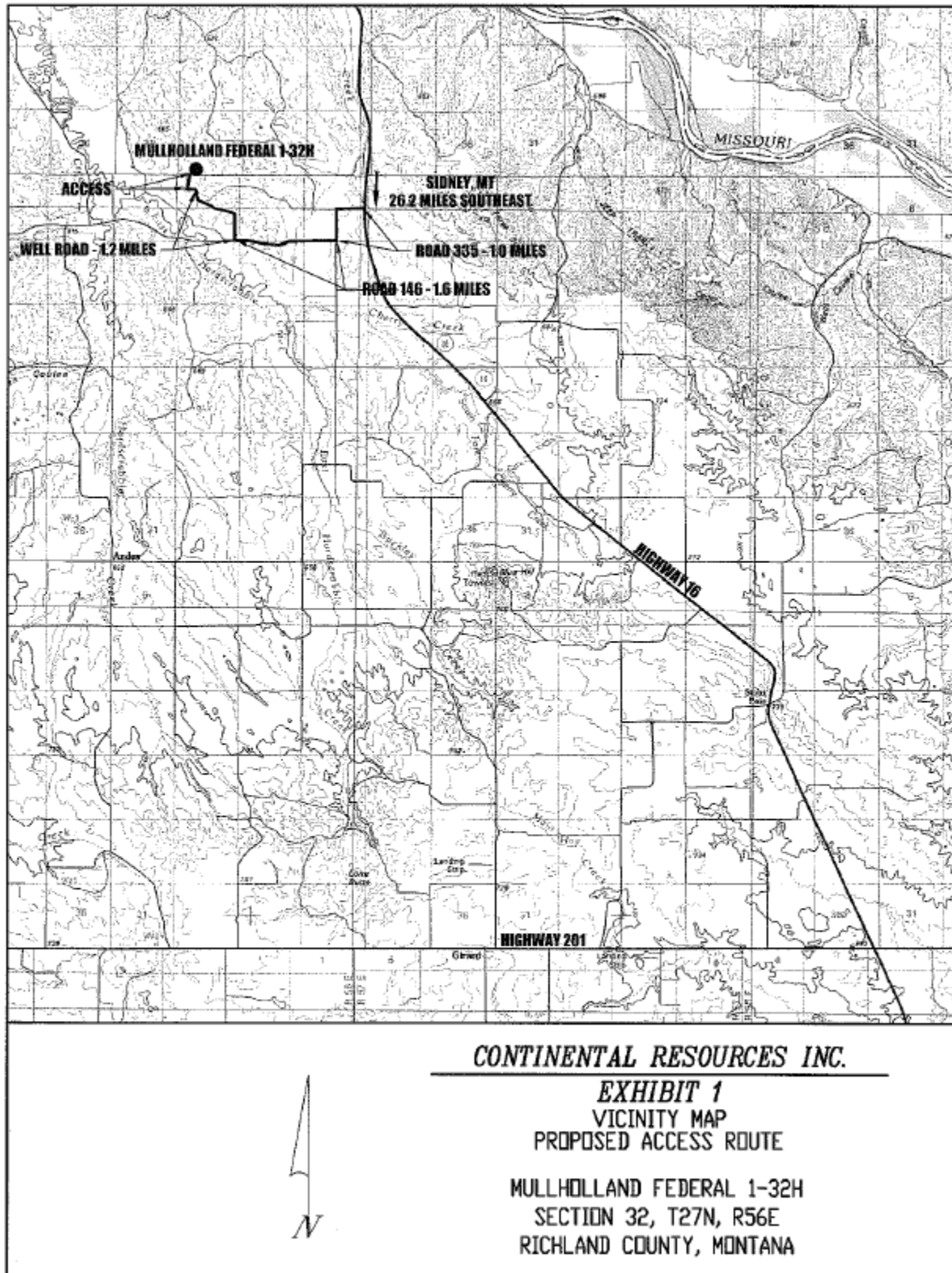
The proposed access road for the Mulholland Federal 1-32H is approximately 300 feet (on fee surface), 342feet (on BLM surface) *see map 1*. The road would have a running surface width of approximately 16 feet. The borrow ditches would be back sloped 3:1 or shallower. The access road would be constructed in accordance with the guidelines established for oil & gas exploration and development activities as referenced in the joint BLM/USFS publication: *Surface Operating Standards for Oil and Gas Exploration and Development*, Fourth Edition and/or BLM Gold Book (Gold Book).

WELL SITE CONSTRUCTION AND DRILLING: The proposed action for drilling and producing oil includes constructing one well pad and road segments to accommodate drilling one horizontal oil well, which is located in Section 32, T. 27 N., R. 56 E., Richland County, Montana as shown in Table 1.

The proposed well pad would be approximately 400 feet wide × 450 feet long each. If the well is completed as successful producer, or if it is unsuccessful, the surfacing material would be removed from the location when the surface disturbance is reclaimed.

The cuts and fills are listed on Table 1, however, in the cuttings pit, the pit would be dug an additional 15 feet in depth. Topsoil would be removed from the area needed for well pad construction and saved for reclamation. Trash would be disposed of in an enclosed container at an approved landfill. Self-contained toilets and closed septic systems would be used for sewage which would be disposed of in accordance with State regulations. A 125' long × 50' wide × 15' deep, lined reserve pit would be excavated in "cut" material on each pad. The reserve pit would be lined with a leak resistant plastic liner a minimum 12 mils in thickness. The reserve pit would be fenced during drilling operations on three sides, and when the drill rig is removed, the fence would be completed on the fourth side of each reserve pit. This is done to keep out wildlife and livestock. The cuttings pit would be flagged or netted to prevent bird mortality after the completion rig is moved from location. Drilling fluids and cuttings would be contained in the pit. Pooled fluids would be vacuumed out of the cuttings pit and would be disposed of at an approved facility, and the pit solids will be allowed to dry in place in the pit and be buried. Produced fluids would be contained in sealed tanks until the construction of oil production facilities are completed.

Map 1. Proposed location



The proposed action for drilling operations is to drill the well to the proposed total measured depth of approximately 20,000 feet. The intermediate portion of the well would be drilled using an invert oil mud system. Intermediate casing would be set and cemented at a measured depth of 10,227 prior to the well being drilled horizontally in the Bakken Formation. The horizontal leg would be open hole completed.

Shallow aquifers would be protected by setting surface casing to about 1,690 feet and cementing back to surface. Potentially productive hydrocarbon zones and deeper aquifers are isolated by running intermediate casing to a measured depth of 10,227 feet. Appropriately sized BOPs would be used to control the well and prevent the accidental release of hydrocarbons or salt water into the environment.

Well Site Completion

Bakken wells typically undergo fracture stimulation as part of the well completion process. Fracture stimulation (i.e., hydraulic fracturing or “fracing”) is a process used to maximize the extraction of underground resources by allowing oil or natural gas to move more freely from the rock pores to production wells that brings the oil or gas to the surface. The hydraulically created fracture acts as a conduit in the rock formation, allowing oil or gas to flow more freely through the fracture system, and to the wellbore where the oil or gas is produced to the surface.

To create or enlarge fractures, fluid comprised typically of water and additives is pumped into the productive formation at a gradually increasing rate and pressure. Hydraulic fracturing fluid is approximately 98 percent water and propping agents (proppant), such as sands with the remainder being chemical additives. Chemicals used in stimulation fluids include acids, friction reducers, surfactants, potassium chloride (KCl), gelling agents, scale inhibitors, corrosion inhibitors, antibacterial agents, and pH adjusting agents and typically comprise less than 2% of the total fluid. When the pressure exceeds the rock strength, the fluids create or enlarge fractures that can extend several hundred feet away from the well. As the fractures are created, a propping agent (usually sand) is pumped into the fractures to keep them from closing when the pressure is released. After fracturing is completed, the majority of the injected fracturing fluids returns to the wellbore and is reused or disposed of at an approved disposal facility.

A typical fracture stimulation technique involves 20-30 stages which partition the wellbore into segments which are each separately fracture stimulated. This allows for more efficient use of frac fluid and proppant and a more evenly distributed treatment of the full length of the wellbore. Approximately 20 to 30 stimulation stages (every 300 to 500 feet) would be needed for a typical horizontal well bore to fracture stimulate the formation. Each stage requires approximately 1400 barrels of fluid (an average of about 36,000 barrels per well). Stimulation fluid would be disposed of at an approved disposal facility or recycled for reuse or a combination of both. This multi-stage hydraulic fracturing has allowed development of the Bakken formation that was previously uneconomic due to low permeability.

Production Facilities

The production and tank battery facilities for the well would be located onsite. The tank battery and associated facilities planned for this well would consist of a heater treater, flare pit, three 400 barrel oil tanks and one 400 barrel saltwater tank. All tanks are 20 feet tall and 12 feet in diameter.

All above ground facilities would be painted Covert Green within six months of well completion and maintained as such to comply with visual quality objectives. The tanks, heater treater and separators would be surrounded on four sides by an impermeable dike of sufficient capacity to contain the contents plus one day's production. The operator would comply with all federal laws pertaining to noise control. The access road and production pad would have scoria as the foundation for the surfacing material.

Continental would eradicate weeds on the entire project area with established guidelines of Federal, State, and Local Agencies, in accordance with an authorized pesticide use plan. Continental would require all vehicles entering and leaving location to be in clean condition to minimize transport and establishment of noxious weeds.

Interim Reclamation

After this well is completed for production, the location and surrounding area would be cleared of all unused tubing, equipment, debris, materials, trash, and junk and items not required for production. The well pad would be reduced in size to accommodate only as much of the area that is needed for the pumping unit and a work-over rig, which is approximately 200 feet by 320 feet (approx. 1.5 acres). The unused portions of the well pad would be re-contoured, topsoil redistributed, and seeded with the prescribed seed mixture. The top soil areas would be seeded promptly after completion of drilling operations, depending on season/weather constraints. The entire disturbed areas would be fenced to help establish vegetative cover. Disturbed areas would be monitored for erosion and action would be taken to stabilize, repair, and re-seed eroded or washed areas.

Final Reclamation

When the well is plugged and abandoned, Continental would submit a Sundry Notice to the Authorized Officer for approval to complete the final abandonment requirements for reclamation of the locations. At final abandonment, the well location, production facilities, and access road would undergo "final" reclamation so that the character and productivity of the land and water are restored.

The well would be plugged according to federal or state requirements. After the well is plugged, the location would be cleared of all facilities, equipment, and the surface reclaimed. The surfacing material would be removed. The well sites and other disturbed areas would be recontoured and seeded with the prescribed seed mix. Erosion control measures would be installed as needed. An abandonment marker would be installed in the well bores and it would be 4' below ground level.

The access road would be reclaimed to near natural conditions removing scoria, re-contouring all cut and fills slopes, and establishing all natural drainage, and seeding during the final reclamation of the well pad, unless the surface owner and Continental have an agreement to leave the access road for the landowners use.

Migratory Bird Treaty Act. The Operator is responsible for compliance with provisions of the this Act by implementing one of the following measures; a) **avoidance by timing**; ground disturbing activities will not occur from April 15 to July 15, b) **habitat manipulation**; render proposed project footprints unsuitable for nesting prior to the arrival of migratory birds (blading or pre-clearing of vegetation must occur prior to April 15 within the area scheduled for activities

between April 15 and July 15 of that year to deter nesting, or c) **survey-buffer-monitor**; surveys will be conducted within the area of the proposed action and a 300 foot buffer from the proposed project footprint between April 15 to July 15 if activities are proposed within this timeframe. If nesting birds are found, activities would not be allowed within 0.1 miles of nests until after the birds have fledged. If active nests are not found, construction activities must occur within 7 days of the survey. If this does not occur, new surveys must be conducted. Survey reports will be submitted to the BLM-Miles City Field Office.

NO ACTION ALTERNATIVE: The “no action” alternative would be that BLM would not authorize the application to drill the proposed wells.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Proposed Action with Least Restrictive Timing Requirement

The timing restriction shown below, designed to minimize effects to nesting migratory birds is not a lease stipulation attached to the subject lease but could be imposed via a condition of approval attached to the APD in accordance with Onshore Order Number 1 (43 CFR 3101.1-2). However, the less restrictive timing was dropped from further consideration because the timeframe was determined to be not as effective in protecting migratory birds as compared to the longer timeframe analyzed in this analysis as well as previous documents. This is based on analysis of wildlife impacts for this alternative which is incorporated by reference from the [Nadel & Gussman Rockies LLC, MTM95366 Environmental Assessment \(MT-C020-2011-211\)](#) and the [Continental Resources, Inc. MTM 84665 Environmental Assessment \(MT-C020-2011-137\)](#).

To minimize effects to nesting migratory birds in the vicinity of the proposed action, no ground disturbing activities would occur from April 15 and July 15 or the option of pre-construction surveys performed by a qualified biologist would be required. If no nesting migratory birds are found, approval would be granted by the Bureau. If nesting birds are found, activities would be precluded until after July 15 or allowed if nests could be avoided by the activity in a manner which would not result in nest abandonment.

AFFECTED ENVIRONMENT:

Table 2. The following critical resources have been evaluated in this EA:

Mandatory Item	Potentially Impacted	No Impact	Not Present On Site
Threatened and Endangered Species		X	
Floodplains			X
Wilderness Values			X
ACECs			X
Water Resources	X		
Air Quality	X		
Cultural or Historical Values			X

Prime or Unique Farmlands			X
Wild & Scenic Rivers			X
Wetland/Riparian			X
Native American Religious Concerns			X
Wastes, Hazardous or Solids	X		
Invasive, Nonnative Species	X		
Environmental Justice		X	

Water Resources, Air Quality, and Invasive/Non-native Species are potentially affected and will be analyzed further, as will other potentially affected resources. Forestry, Geology, Recreation, Wetlands, Livestock Grazing, or Ecologically Critical Areas are not considered to be affected by the proposed action and will not be analyzed in detail in this Environmental Assessment.

Air Quality: The general area surrounding the proposed well site has a Class II air quality rating. The air quality and visibility in the general area as well as at the proposed well site is good. The air would contain some pollution from the oil and gas activities in the oil fields in the surrounding area.

Cultural Resources: The proposed well pad and access were examined for cultural resources in May 2013. No cultural resources were reported in the inventory (See BLM Cultural Resources Report Mt-020-13-149).

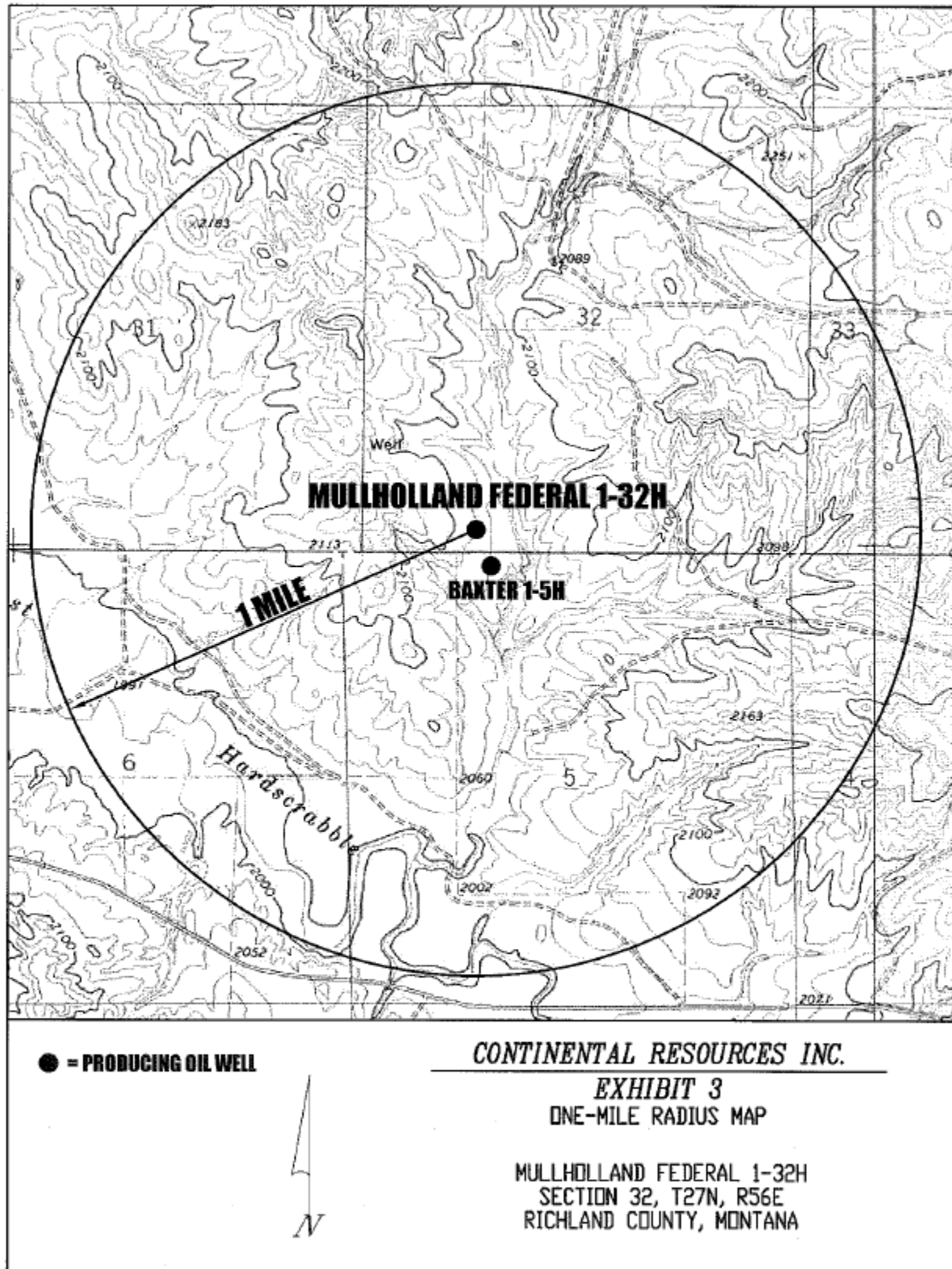
Paleontology: The proposed action is in the Tongue River Member of the Paleocene Fort Union Geologic Formation. The Tongue River member has a Potential Fossil Yield Classification of 3a in the Miles City Field Office. This means that while vertebrate fossils have been reported, they do not occur on a regular basis. A review of the Miles City Field Office Paleontological Database shows no paleontological localities recorded in the area of the proposed action.

Hydrology: The proposed action is located within the East Hardscrabble Creek Watershed (HUC 1006000503). East Hardscrabble Creek is a perennial stream located approx. 1 mile south of the proposed action. Other drainages in the area are largely ephemeral in nature and only flow as a result of snowmelt or precipitation events. Peak flows generally occur March through May, resulting from melting snow and rainfall. Intense flows of short duration occur throughout the summer following thunderstorms. There are no streams in the watershed that are MT-DEQ listed under §303(d) of the Clean Water Act as impaired. However, East Hardscrabble Creek drains into Hardscrabble Creek 3.9 miles below the proposed action. Hardscrabble Creek is listed as impaired due to specific conductance, total nitrogen, and total dissolved solids. The impairment has been attributed to natural sources and agriculture.

Review of data from Montana Bureau of Mines and Geology Groundwater Information Center (<http://mbmggwic.mtech.edu/> [accessed 6/10/2013]) indicates 3 wells are present within one mile of the proposed action. Complete data only exists for one well with a total depth of 152 feet and a static water level at approximately 90 feet. All 3 wells are completed in the Tongue River Member of the Fort Union Formation and are used as a source of stock water.

Lands/Realty: There are no BLM-issued rights-of-way or permits in the areas of the proposed actions.

Map 2. Proposed Mulholland Federal 1-32H well location w/ 1 mile buffer



Minerals: This oil well may result in the production and partial depletion of oil from the Bakken Formation. Other mineral resources present in the area would not be affected by this action.

Soils: Soils in this area are derived from glacial materials and have silt to very gravely sandy loam textures. The NRCS SSTATSGO database identifies the soils at the drilling pad site as Tinsley-Lambert Complex. The Tinsley-Lambert complex consists of very deep, excessively drained soils that formed in alluvium consisting of sand and gravel deposits associated with lakes and glacial river channels. The soils have a low to moderately low potential for erosion by water ($K_w = 0.15 - 0.37$), and a moderate potential for erosion by wind (Wind Erodibility Index of 86 tons per acre per year). The soils are rated highly susceptible for degradation to occur during disturbance. The ratings represent the relative risk of water and wind erosion, salinization, sodification, organic matter and nutrient depletion and/or redistribution, and loss of adequate rooting depth to maintain desired plant communities.

Vegetation: The local vicinity contains: Fringed Sagewart, Silver sage, Snow berry, Choke cherry, Buffalo berry, Golden current, Bluebunch wheatgrass, Needle & thread grass, Threadleaf sedge, Green needlegrass, Little bluestem, Prairie junegrass, Sandberg's bluegrass, Western wheatgrass, Blue grama, June grass, Intermediate wheatgrass, Sun sedge, Plains pricklypear, Desert bisquitroot, Club moss, Sand lily, Black Sampson, Breadroot scurfpea, Small-leaf pussytoes, American Vetch, Goldenpea, White prairie aster, Hoods phlox creeping juniper, Textile onion, Slender crazyweed, Narrowleaf gromwell, Plains milkvetch, Nuttalls, violet, scarlet globemallow, White chickweed, Yarrow, Clover, Wavy-leaf thistle, Echinacea, and Green ash.

Visual Resource Management (VRM): This region has low rolling hills and fields covered with prairie vegetation on slopes, and brushes in the draws, or are cultivated croplands. There are fence lines locally, and livestock are being pastured on this location. The geomorphologic features of this region are the result of glaciation, and the viewshed is consistent with the VRM Class IV Objectives. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic landform elements.

Wildlife: A wide variety of wildlife species and habitats exist in the proposed action area. Mule deer, occasional white-tailed deer, sharp-tailed grouse and numerous non-game wildlife species including migratory birds inhabit the proposed well area. The proposed action is within identified white-tailed deer winter range. Excellent sharp-tailed grouse habitat exists in the area including woody draws and uplands providing dancing, nesting and brood rearing habitats. One strutting ground was recently surveyed approximately 1.8 miles from the proposed project. Spragues pipit, a candidate species may occur in the subject area. Other BLM Sensitive Species may also exist in the area including Brewer's sparrow, Chesnut-collared longspur and Loggerhead shrikes during the spring, summer and fall time periods. Although the proposed action is within identified whooping crane (endangered) migration corridor, the area does not contain optimal habitat for roosting or loafing areas. No other threatened or endangered species are known to inhabit the area.

DESCRIPTION OF ENVIRONMENTAL EFFECTS FROM the PROPOSED ACTION:

Air: Air quality within a short distance from construction and drilling and completion activities would be temporarily affected by increased dust levels, exhaust gas from rig and vehicle engines, and other activities related to the surface disturbance prior to drilling, and during the drilling/completion of the oil well. Flaring or venting of produced gas may be necessary to produce this well but would not degrade air quality to large degree. Visibility is extremely good. Existing air quality and visibility would be temporarily affected by fugitive dust from vehicles, and vehicle emissions. These impacts would not be anticipated to exceed air quality standards. Noticeable affects to Class I air sheds are not anticipated as Fort Peck Reservation is approximately 5 miles north of the location. Application of scoria surfacing material and completion of reclamation would help reduce fugitive dust levels.

Cultural: There would be no impacts to cultural resources as a result of the selection and implementation of Alternative A, the Proposed Action alternative. No cultural sites were recorded during the inventory of the proposed well pad and access road. Unanticipated discoveries during facility construction would be dealt with through implementation of the Cultural Resources Condition of Approval attached to this document.

Hydrology: The removal of vegetation, soil disturbance, and soil compaction on approximately 4.4 acres would increase erosion, sedimentation, and overland flow and reduce localized water quality by increasing sedimentation, turbidity, nutrients, and metals. Low permeability surfacing (e.g. roads and well pads) would increase the energy and amount of overland flow, which in turn increases sedimentation and erosion in the long term. However, erosion and sediment control measures and the presence of vegetation between the construction sites and waterbodies would reduce these effects. Additionally, these impacts would be mitigated by implementing interim reclamation practices. In the long term, erosion rates would return to natural levels once vegetation cover is reestablished. Surface water quality could be affected by spills of produced fluids or other materials.

Groundwater quality could be affected by contamination from salts, drilling fluids, fluids and gases from other formations, detergents, solvents, hydrocarbons, metals, and nutrients. Appropriate well completion and use of surface and intermediate casings would reduce the potential for contamination of shallow and deep aquifers, respectively.

Minerals: Completion of the proposed well as an oil well along with the installation of the associated infrastructure would result in additional oil and natural gas entering the market and an increase of royalties to the Federal and State governments. Production and test results may lead to drilling additional wells in the area.

Socioeconomics: Drilling/development activities would contribute to the local economy by providing employment opportunities, monies to local contractors, increased local tax base, and recycled revenues through the local economy. Additional revenues would be generated in the form of royalty payments to the state and federal governments.

Soils: Approximately 4.4 acres of soils would be disturbed by well-pad and infrastructure, construction, resulting in soil mixing, and ground-cover removal. Such surface disturbing acts alter soil characteristics and reduce ground cover exposing soils to accelerated erosion by wind

and water. Soil recovery following disturbance would be accelerated by measures that minimize the total area of disturbance, control wind and water erosion, maintain topsoil viability, and reduce compaction, as well as rapid implementation of reclamation. Due to the nature of the soils (gravely soils) and steep slopes, successful reclamation of these sites may be difficult because the site is susceptible to wind and water erosion. Soil erosion from wind and water would occur during and shortly after construction.

Once construction is completed and vegetation is reestablished, erosion should return to natural conditions. Monitoring would be needed to assure the effectiveness of these reclamation activities. Measures such as applying mulch, erosion control matting, surface roughening, wind fencing, or additional seeding may be required. Monitoring would be used to assess the effectiveness of these reclamation activities.

Vegetation: Approximately 4.4 acres would be removed by the proposed horizontal oil well. The well location and road would be reclaimed, contoured and seeded to meet the fee surface owner's requirements following construction or abandonment operations. The reclamation measures, along with an approved weed management plan, would ensure potential impacts from noxious weeds and invasive plants would be minimal. The reclamation measures in the Surface Use Plan and Conditions of Approval would help mitigate potential impacts from noxious and invasive weeds.

Following plugging and abandonment, the disturbed area would be reclaimed, contoured, and seeded, to the surface owner's requirements to reestablish a vegetation regime of their choosing. The disturbance would present the opportunity for noxious weed invasion and spread, which may be brought in by natural carries and/or construction equipment.

Wildlife: Direct impacts include the loss of approximately 4.4 acres of wildlife habitat due to the proposed action. Direct impacts may also include potential mortality of some relatively small, immobile species as a result of construction and earth moving activities, and mortalities resulting from vehicle collisions. In addition to direct impacts, indirect impacts of this action would be expected to affect hundreds of acres of habitat and also last for the life of the wells. The proposed well is adjacent to an existing producing oil well, which would decrease the area of indirect impact. Construction, drilling, oil production, and the associated vehicle traffic would result in long-term or temporary displacement of some wildlife species. Indirect impacts include the loss or reduction in suitability of habitat, improved habitat for undesirable (non-native) competitors, species or community shift to species or communities more tolerant of disturbances, habitat fragmentation, increased predation, habitat avoidance, and displacement of wildlife species resulting from human presence. The use of timing stipulations for this project would minimize, but not preclude impacts to wildlife. Timing stipulations attempt to minimize impacts during the year of development, but do not minimize those indirect impacts listed previously after the initial development phase.

As previously stated, excellent habitat for sharp-tailed grouse exists. Limited research is available that documents impacts to sharp-tailed grouse from development activities. However, numerous studies have occurred documenting oil and gas impacts to sage grouse, and it is expected that sharp-tailed grouse would be impacted from these types of activities similarly but differently. Impacts would include loss of habitat, displacement, increased mortality, and lower populations within the area of impact. Vehicles and human activity during breeding and nesting

seasons would reduce breeding activity, displace nesting hens and reduce the suitability of habitat for brood-rearing. Mortality may increase as a result of collisions with vehicles. A condition of approval will be attached that will prohibit development associated with this well from March 1 to June 15. This COA will minimize the potential of disturbing sharp-tailed grouse breeding, nesting, and brood-rearing activities this year, and will allow for surveys to be conducted within the appropriate timeframe.

Numerous species of birds were identified as potential inhabitants across the analysis area. The primary impacts to these species would include disturbance of preferred nesting habitats, improved habitat for undesirable competitors and/or a species shift to disturbance associated species, and increased vehicle collisions. Research in Sublette County, Wyoming on the effects of natural gas development on sagebrush steppe passerines documented negative impacts to sagebrush obligates such as Brewer's sparrows, sage sparrows, and sage thrashers (Ingelfinger 2001). The impacts were reported greatest along roads where traffic volumes are high and within 100 meters of these roads. Sagebrush obligates were reduced within these areas by as much as 60%. Sagebrush obligate density was reduced by 50% within 100 meters of a road even when traffic volumes were less than 12 vehicles /day. Some species, such as horned larks, may increase in abundance from development. Although habitats in this area consist predominately of grasslands with minimal shrubs, impacts to some native songbird species would likely be similar to other studies. As these studies were conducted in fully developed fields, it is reasonable to assume there would be much less impacts to nesting and migrating bird species from this proposal; however, still likely at a smaller scale.

Sprague's pipits would be expected to utilize habitat in this area. A number of studies have found that Sprague's pipits appear to avoid non-grassland features in the landscape, including roads, trails, oil wells, croplands, woody vegetation, and wetlands (Dale et al. 2009, pp. 194, 200; Koper et al. 2009, pp. 1287, 1293, 1294, 1296; Greer 2009, p. 65; Linnen 2008, pp. 1, 9-11, 15; Sutter et al. 2000, pp. 112-114). Sprague's pipits avoid oil wells, staying up to 350 meters (m) (1148 feet (ft)) away (Linnen 2008, pp. 1, 9-11), magnifying the effect of the well feature itself. Oil and gas wells, especially at high densities, decrease the amount of habitat available for breeding territories. (Federal Register: September 15, 2010 (Volume 75, Number 178)) Displacement of Sprague's pipits from areas immediately adjacent to the well locations to preferred areas is expected.

Stipulations do not exist specifically for the protection of BLM sensitive songbirds. The MBTA prohibits the take, capture or kill of any migratory bird, any part, nest or eggs of any such bird (16 U.S.C 703 (a)). NEPA analysis pursuant to Executive Order 13186 (January 2001) requires BLM to ensure that MBTA compliance and the effects of Bureau actions and agency plans on migratory birds are evaluated, should reduce take of migratory birds and contribute to their conservation. Effects to migratory birds would include direct loss of habitat from roads, well pads and other infrastructure, disturbance, and unintended direct mortality, fragmentation of habitat, change in use of habitats, and potential threats and competition from edge species. Conditions of approval for migratory birds are attached to the Mulholland 1-32H well location under the mitigation section and would minimize the potential taking of migratory birds during the construction phase. One option available for adherence to the act is a timing of construction restriction from April 15 to July 15. Any construction after July 15 still has the potential to take birds, eggs, or nests, as some species have multiple clutches including some after July 15,

including Sprague's pipits. Take of bald and golden eagles and any other migratory raptors is not expected as a result of this project

The proposed project is within identified white-tailed deer winter range. Oil and gas development is allowed within big game crucial winter range with a timing restriction from December 1 to March 31. This stipulation does not apply to operation and maintenance of production facilities. The goal of this stipulation is to protect crucial big game habitats from disturbance during the winter use season. This stipulation provides protection to big game winter habitats and species only during that timeframe, and does not provide protection during the long-term operation and maintenance periods. Development can occur outside of those dates and will exist thereafter until reclamation, thus only delaying impacts until after that year of construction.

DESCRIPTION OF IMPACTS FROM the NO ACTION ALTERNATIVE:

The "no action" alternative would be that BLM would not authorize any construction, drilling or production activities needed for the proposed well and to enter and produce from Federal leases. Consequently, there would not be any additional impacts to the environment.

Minerals: Under this Alternative, the Federal leases would not be reached by the proposed wells, which could result in no increase in oil production from portions of each lease and no opportunity of obtaining additional knowledge of the oil and gas resource in the area. Under this Alternative, the proposed well would not be drilled and production would not be obtained which would result in the loss of its contribution of oil and gas to the market and royalties to the federal government, state of Montana, and fee mineral owners.

CUMULATIVE IMPACTS FROM the PROPOSED ACTION:

Under this Alternative, there would be continuing impacts to the area's hydrology, soils, vegetation, and wildlife due to existing disturbances from farming, ongoing reclamation, oil and gas infrastructure installation and construction, and other related surface disturbing activities in the area. Existing surface disturbing activities within 1 mile (2,009.6 acres) of the proposed well are: 1 producing oil wells and an undetermined amount of dryland farming. The primary use of this area is agriculture, with native rangelands and dryland farming. The nearest occupied dwelling is approximately 2.5 miles to the south east.

The proposed well is located in an area of both perennial and annual vegetation, surrounded by agriculture and grasslands at a much broader scale. The proposed well site and surrounding area serves as wildlife habitat for a variety of species. The addition of the proposed well and constructed access route will impact individual wildlife species but will add negligible stress to the population level; however, the result of all past actions coupled with this action would increase the extent of stressors on the native fauna within the area. Short term (<5 years) impacts from the proposed action would include soil erosion, reduction of vegetative cover which would result in wind and water erosion, increased potential for spread of noxious weeds in the area; additional habitat fragmentation, and permanent or temporary displacement of some wildlife species including migratory bird species. These impacts would be reduced once interim reclamation is completed. Long term (>5 years) cumulative impacts that are reasonably foreseen from existing and proposed activities include an increase in habitat fragmentation on a landscape scale and an increase in revenue for the state of Montana and the federal government. These

impacts would be reduced when the well is plugged and abandoned, and final reclamation is completed.

Over the last 10 years, advances in multi-stage and multi-zone hydraulic fracturing has allowed development of oil and gas fields that previously were uneconomic. These drilling and fracturing completion techniques have resulted in a very large cumulative increase in oil and gas production from the Bakken and Three Forks formations in the Williston basin of North Dakota, Montana, and Canada.

CUMULATIVE IMPACTS FROM the NO ACTION ALTERNATIVE :

The proposed well would not contribute to cumulative impacts to the surrounding resources because no activities would be authorized by the BLM. The existing environment would continue to undergo impacts from existing activities and other activities that might be approved in the project areas.

There would be no additional cumulative impacts to the resources in the analysis area if the BLM did not approve the applications for permit to drill.

Air Quality: Air quality within the surrounding area of the proposed well would not be altered by the “no action” alternative. Ongoing impacts from proposed construction and drilling and other future operations within this area would be minor in nature, and not anticipated to exceed air quality standards. Noticeable affects to Class I airsheds are not anticipated due to the low magnitude of emissions, as well as geographic distances. The Fort Peck Reservation is approximately 5 miles north of the location.

Cultural Resources: There will be no impacts to cultural resources as a result of the selection and implementation of Alternative B, the No Action alternative.

Hydrology: Under this Alternative, there would be no direct impact to water resources. However, there would be continued erosion, sedimentation, and reduced water quality from existing disturbances and future disturbances such as well pads, roads, ongoing reclamation, flowline installation, construction, and other related surface disturbing activities in the area.

Soils: There would be no direct impacts to soils under this Alternative; however, existing and future surface disturbing activities would continue to cause soil mixing, removal, and compaction, resulting in accelerated erosion by wind and water.

Vegetation: There would be no direct impacts to vegetation evolution under this Alternative, and existing natural selection and succession of the ecology in this vicinity would continue. The permanent presence of the county road would continue to be a source of potential disseminations of additional species of vegetation, as long as there will be traffic upon it traveling through the area.

VRM: There would be no direct impacts to VRM under this Alternative; however, existing surface-disturbing activities would continue, because of the permanent presence of the county road, with the potential traffic along it impacting the environment adjacent to it.

Wildlife: There would be no direct or indirect impacts to wildlife habitats or the associated wildlife species under this no-action alternative. Existing land uses within and adjacent to the proposed action area will continue to impact wildlife habitat and the associated wildlife species.

MITIGATION TO REDUCE CUMULATIVE IMPACTS FROM THE PROPOSED ACTION

The well was moved 25 feet upslope to keep fill material out of drainage. Southeast corner of pad was rounded to reduce erosion.

Hydrology: Erosion Control measures that would be installed on fill at the top, mid, and toe of the slope

- The operator shall install culverts and ditch blocks as need to outlet water.
- The operator should install erosion control on the downstream ends of culverts
- The operator will monitor and inspect grading operations and provide specific erosion control placement where needed.

Soils: All topsoil and subsoil would be removed from the area needed for well pad construction and saved for reclamation

Erosion control measures for the pad are as follows:

- Install wattles at toe slopes for all pad grading areas. Wattles shall be installed prior to construction and topsoil stripping.
- Immediately establish vegetation growth after recontouring and topsoil placement.
- Install straw wattles in all ditch areas that transition from cut to fill.

Vegetation: Vehicle traffic shall be confined to the approved access road and well site. Off-road vehicle travel is not authorized. Maintain existing roads in good condition. The operator shall be responsible for control of noxious weeds occurring as a result of lease operations.

VRM: All above ground facilities would be painted Covert Green in accordance with the surface owner's wishes, within six months of the well completion.

Waste Disposal and Containment of Fluids: Any materials classified, as nonexempt hazardous wastes, shall be disposed of at an Environmental Protection Agency (EPA) approved facility. A fence shall be maintained in a manner to prevent livestock and wildlife from entering the area of the well pads, and shall be constructed in accordance with the landowner's specifications.

Drilling Operations: The drilling location shall be cleaned of all debris, material and equipment after the well is completed. Equipment cannot be stored on the topsoil stockpile. Burning materials or oil is not allowed as part of this project.

If H₂S is encountered in excess of 100 parts-per-million (ppm) in the gas stream, the operator shall bring the operations into compliance with applicable provisions of Onshore Order No. 6.

Shallow aquifers would be protected by running surface casing to about 1,690 ft. and cementing back to the surface. Potentially productive hydrocarbon zones and deeper aquifers would be isolated by running production casing to about 10,227 ft. MD and cementing back nearly to surface.

Appropriately sized BOP's would be used to control the well and prevent the accidental release of hydrocarbons or salt water into the environment.

Wildlife: The timing stipulations and conditions of approval for migratory bird species, sharp-tailed grouse, and mule deer, provide some protection for those species during the initial year of development. A closed loop drilling system would also minimize potential impacts to wildlife.

Surface Reclamation: Within 6 months after well completion the following interim reclamation on the well sites and access road would be done:

- For production, the unused portions of the pad would be recontoured
- All available stockpiled topsoil shall be used for interim reclamation to maintain viability and increase the productivity.
- Reseed to the surface owners requirements.

The reclamation effort shall be evaluated as a success if:

- The previously disturbed area is stabilized.
- All potential wind and water erosion is minimized.
- Proper drainage is reestablished.
- The area is free of debris.
- The vegetative cover is at least 60% of the species required.

Reclamation would be in accordance with the surface owner's requirements. The reclamation effort would be evaluated as a success if the previously disturbed area is stabilized, all potential water erosion is effectively controlled and the vegetative stand is acceptable to the surface owner. A field inspection and an interim reclamation plan would be required for the well pad.

CONSULTATION/COORDINATION: Continental Resources, Inc., USFWS

LIST OF PREPARERS:

Kent Undlin	Wildlife Biologist
Doug Melton	Archeologist
Paul Helland	Petroleum Engineer
Chris Robinson	Hydrologist
Rick Lang	Natural Resource Specialist

REFERENCES:

- Big Dry RMP/EIS (Final), Appendix Minerals;
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- Continental Resources, Inc., APD's
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Federal Register: September 15, 2010 (Volume 75, Number 178)]

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MILES CITY FIELD OFFICE
FINDING OF NO SIGNIFICANT IMPACT
Continental Resources, Inc.
Mulholland Federal 1-32H, MTM95552

DOI-BLM-MT-C020-2013-163 EA

BACKGROUND

The Bureau of Land Management (BLM) completed an Environmental Assessment (EA), No. DOI-BLM-MT-C020-2013-163 of the above listed Continental Resources, Inc. Applications for Drilling (APD). The APD includes the drilling, completing, and producing one Bakken horizontal oil well, along with the construction of a well pad, road, and installation of the associated infrastructure, inclusive of flowlines, and reclamation of the disturbed areas.

The well would be drilled and completed in the Bakken Formation, a wildcat oil and gas reservoir. The average production life of the well is expected to be 20 to 30 years with final reclamation to be completed 2 to 3 years after plugging of the wells.

ALTERNATIVES ANALYZED

The EA the Proposed Action with Full Timing and the respective BLM imposed mitigation measures and the No Action Alternative. The EA is attached to and incorporated by reference into this Finding of No Significant Impact (FONSI) determination.

FINDING OF NO SIGNIFICANT IMPACT

On the basis of the information contained in the EA (DOI-BLM-MT-C020-2013-163-EA), and all other information available to me, it is my determination that:

- (1) The implementation of the Proposed Action or alternatives would not have significant environmental impacts beyond those already addressed in the Big Dry Resource Management Plan.
- (2) The Proposed Action would be in conformance with the Record of Decision for the Big Dry Resource Management Plan; and
- (3) The Proposed Action would not constitute a major federal action having a significant effect on the human environment.

Therefore, an environmental impact statement or a supplement to the existing environmental impact statement would not be necessary and would not be prepared.

This finding is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), both with regard to the context and to the intensity of the impacts described in the EA.

Context

The project is a site-specific action directly involving a total of approximately 4.4 acres of new disturbance in Richland County, Montana. The project area includes 1 producing oil well (an area determined within a radius of 1 miles from the proposed well locations that amounts to about 2,009.6 acres). The proposed action would be to construct one level well pad, and associated access road.

Intensity

The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into resources and issues considered (includes supplemental authorities Appendix 1 H-1790-1) and supplemental Instruction Memorandum, Acts, regulations and Executive Orders. The following have been considered in evaluating intensity for this proposal:

1. *Impacts that may be both beneficial and adverse.* The proposed action would impact resources as described in the EA. Mitigation measures to minimize or eliminate adverse impacts were identified in the analysis and will be included as Conditions of Approval with the approved permits. The EA also disclosed beneficial impacts from the proposed project, such as the potential to bring additional oil and gas into the market place and increase revenues to federal and state and local governments, and to obtain scientific data of the local geology, and to increase the knowledge base of the mineral resources potential. None of the environmental effects discussed in detail in the EA exceed those described in the Big Dry Resource Area Management Plan.

2. *The degree to which the proposed action affects public health and safety.* No aspect of the proposed action would have an effect on public health and safety. The selected alternative minimizes adverse impacts to public health and safety by project design and additional mitigation measures. No residences are located within a 1 mile radius of the proposed wells. Implementation of H₂S Safety Measures will be required if H₂S is encountered in excess of 100 ppm in the gas stream, the operator shall immediately ensure control of the well, suspend drilling ahead operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with applicable provisions of Onshore Order No. 6.

3. *Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.* The location of the proposed well and access road have been subject to a cultural resource inventory. No cultural sites or paleontologic localities were identified during the inventory. (See report number listed in the EA) The historic and cultural resources of the area have been reviewed by BLM and no potential impacts were indicated in the design of the proposed action. There are no effects on park lands, prime farm lands, wetlands, wild and scenic rivers, or ecologically critical areas.

4. *The degree to which the effects on the quality of the human environment are likely to be highly controversial.* No unique or appreciable scientific controversy has been identified

regarding the effects of the Proposed Action. The environmental analysis did not show any highly controversial effects to the quality of the human environment.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks. The analysis did not show any unique or unknown risks to the human environment. The project is not unique or unusual because BLM, the State of Montana and the State of North Dakota have approved similar actions in the same geographic area. The environmental effects to the human environment are analyzed in the environmental assessment. There are no known predicted effects on the human environment that are considered to be highly uncertain or involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The actions considered in the preferred alternative were considered by BLM within the context of past, present, and reasonably foreseeable future actions. The action would not establish a precedent, since the project area is in a Wildcat Unit and in the vicinity of other developed oil and gas fields. The proposed action is consistent with actions appropriate for the area as designated by the Big Dry RMP.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. The environmental analysis did not reveal any cumulative effects beyond those already analyzed in the EIS for the Big Dry RMP.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources. The project will not affect districts, sites, highways, structures, or other objects listed on or eligible for listing in the National Register of Historic Places, nor would it cause loss or destruction of significant scientific, cultural, or historical resources. Identified cultural resources would be avoided and would not be impacted by implementing the mitigation measures listed in the conditions of approval for the project.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. There are no threatened or endangered species or habitat in the area of the proposed action. There are no threatened or endangered plant species or habitat in the area.

10. Whether the action threatens a violation of Federal, State, Tribal or Local law or requirements imposed for the protection of the environment. The proposed action does not threaten to violate any Federal, State, Tribal, or local law or requirement imposed for the protection of the environment. Furthermore, the project is consistent with applicable land management plans, policies, and programs.



6/27/2013

Todd D. Yeager
Field Manager
Miles City Field Office

Date

**UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
MILES CITY FIELD OFFICE
DECISION RECORD**

**Continental Resources, Inc.
Mulholland Federal 1-32H, MTM95552**

DOI-BLM-MT-C020-2013-163 EA

DECISION

Based upon the analysis of potential environmental impacts and mitigation measures described in EA DOI-BLM-MT-C020-2013-163, it is my decision to select the Proposed Action, including the mitigation measures, from the EA and approve the Applications for Permit to Drill (APDs) for the well number: Mulholland Federal 1-32H, submitted by Continental Resources and modified by conditions of approval. The selected alternative is in conformance with the Big Dry Resource Management Plan, as amended.

ALTERNATIVES

In addition to the selected alternative, the EA considered the No Action alternative, which would carry out no management activities at this time.

RATIONALE FOR SELECTION

The BLM has been mandated by Congress and the President to manage public lands for multiple uses. One of these legitimate uses is energy production. The purpose of the action is to allow Continental Resources, Inc. to drill and produce the Continental Resources Mulholland Federal 1-32H well in Sections 32, T. 27 N., R. 56 E., Richland, Montana, to provide for the continued orderly, efficient and environmentally responsible development of Federal leases MTM95552, consistent with the goals, objectives, and decisions of the Big Dry Resource Management Plan, April 1996, as amended, which was prepared with extensive public involvement. Oil and gas lease stipulations and potential, but not all, conditions of approval designed to protect sensitive resources were identified at that time. This action is in conformance with the Big Dry Resource Management Plan, which was analyzed in an environmental impact statement.

Compliance and Monitoring: BLM would conduct compliance and monitoring inspections during the different phases of operations. Inspections would be conducted to determine whether or not operations are being conducted in compliance with the approved permit. Monitoring inspections would be conducted to determine the effectiveness of mitigation measures, results of reclamation work, and impacts to other resources. Based upon the results of inspections, BLM would impose requirements to modify operations to minimize or eliminate adverse impacts to other resources.

APPEALS LANGUAGE

You have the right to request a State Director Review of this decision and these Conditions of Approval pursuant to 43 CFR 3165.3(b). An SDR request, including all supporting documentation must be filed with the Montana State Office, State Director (MT-920) at 5001 Southgate Drive, Billings, Montana 59101-4669 within 20 business days of your receipt of this decision. If adversely affected by the State Director's decision, it can be further appealed to the Interior Board of Land Appeals (IBLA) pursuant to 43 CFR 3165.4, 43 CFR 4.411, and 43 CFR 4.413. Should you fail to timely request an SDR, or after receiving the State Director's decision, fail to timely file an appeal with IBLA, no further administrative review of this decision would be possible.



Todd D. Yeager
Field Manager
Miles City Field Office

6/27/2013

Date



In Reply To:

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City Field Office
111 Garryowen Road
Miles City, Montana 59301-7000
<http://www.blm.gov/mt>



3160 (MTC022)
MTM95552

6/27/2013

Continental Resources Inc.
Attn: Christi Scritchfield
P. O. Box 268870
Oklahoma City, OK 73126

Dear Ms Scritchfield:

Your application to drill Mulholland Federal 1-32H well into Federal Lease MTM95552 located in SE $\frac{1}{4}$ SW $\frac{1}{4}$, Section 32, T. 27 N., R. 56 E., in Richland County, Montana, is approved subject to the provisions of the Applications for Permit to Drill, including the drilling and surface use programs submitted with your application, plus the following Conditions of Approval. Please be advised that all lease operations are also subject to the terms of the lease, all lease stipulations.

The spacing unit for this well requires a communitization agreement. Therefore, the operator shall submit a communitization agreement to the Bureau of Land Management, Miles City Field Office, 111 Garryowen Road, Miles City, Montana 59301.

CONDITIONS OF APPROVAL

1. Site Specific:

Migratory Bird Treaty Act. The Operator is responsible for compliance with provisions of the this Act by implementing one of the following measures; a) **avoidance by timing**; ground disturbing activities will not occur from April 15 to July 15, b) **habitat manipulation**; render proposed project footprints unsuitable for nesting prior to the arrival of migratory birds (blading or pre-clearing of vegetation must occur prior to April 15 within the area scheduled for activities between April 15 and July 15 of that year to deter nesting, or c) **survey-buffer-monitor**; surveys will be conducted within the area of the proposed action and a 300 foot buffer from the proposed project footprint between April 15 to July 15 if activities are proposed within this timeframe. If nesting birds are found, activities would not be allowed within 0.1 miles of nests until after the birds have fledged. If active nests are not found, construction activities must occur within 7 days of the survey. If this does not occur, new surveys must be conducted. Survey reports will be submitted to the BLM-Miles City Field Office.

Construction and drilling activities will not occur from December 1 to March 31 for the protection of mule deer winter range.

Construction and drilling activities will not occur from March 1 to June 15 to protect breeding, nesting, and brood-rearing activities for sharp-tailed grouse.

A. Access Road:

1. The proposed access roads shall be constructed according to the approved APD for each proposed location.
2. The proposed access roads shall be surfaced with scoria
3. The operator shall be responsible for locating and protecting existing pipelines, power lines, telephone lines and other related infrastructure.
4. The operator shall be responsible for obtaining all necessary authorizations and permits related to conducting operations for the proposed wells.
5. No construction or routine maintenance activities shall be performed during periods when the ground is frozen or is too wet to adequately support construction equipment. If such equipment creates ruts in excess of 4 inches deep upon travel ways, the soil shall be deemed too wet to adequately support construction equipment.
6. Vehicle traffic shall be confined to the approved access road and well sites. Off-road vehicle travel is not authorized. Maintain existing roads in good condition.
7. All access roads would be constructed according to Surface Operating Standards and Guidelines (The Gold Book) for road shape and drainage features at all times during construction.

B. Production Facilities:

1. The proposed location of production facilities shall be as described in the approved APDs.
2. The location shall be cleaned up of all debris, material and equipment after completion of construction activity.
3. The well pads shall be surfaced with scoria.
4. All above ground facilities shall be painted Covert Green 18-0617TPX within six months of well completion and maintained as such to comply with visual quality objectives.

C. Waste Disposal:

1. Any materials classified as nonexempt hazardous wastes shall be disposed of in an EPA approved facility.
2. Burning of materials or oil is not allowed.

D. Well Site Layout:

1. Erosion and sediment control (e.g. straw waddles, silt fencing, or geotextile fabric) shall be placed on the fill side of the pads and at the bottom of stockpiled topsoil and pit material to prevent material from entering drainages.
2. The well pads shall be constructed in accordance with the "cut/fill" diagram submitted in the corresponding approved APD.
3. At the beginning of construction, 6" of topsoil, if available, shall be removed entirely from each pad and areas of surface disturbance during the construction of roads and facilities, and stockpiled separately from overburden stockpiles for reclamation.
4. The topsoil and subsoil shall be stockpiled as designated in the APDs to prevent impacts to drainages. Erosion control measures, such as geotextiles, water bars, or certified weed-seed free straw or hay wattles, shall be installed on 3:1 or steeper slopes, or on slopes with bare soil.
5. Equipment cannot be stored on stockpiles.
6. A 2' high earthen dike shall be constructed along the "fill" sides of the well pads during drilling operations.

E. Drilling Operations:

1. The reserve pit shall be fenced on three sides during the drilling phase of the operation, and when the rig moves off location, the fourth side shall be enclosed. The fence shall be constructed to the following requirements: posts to be no more than 16' apart; fence wire: four wires of at least 12.5 gauge, double strand twisted; two stays between posts; wire stretched taut between brace panels, wire spacing from the ground up: 14", 22", 30", 42". Steel panels may be used to fence the pits. If steel panels are used, a steel post shall be placed every 50' to reinforce panels. Fence shall be maintained to prevent livestock and wildlife from entering the area.
2. Storage tanks must be on the pad and surrounded with a dike and trench sloped to the reserve pits.
3. A minimum of 2 feet of freeboard must be maintained above the fluid level in the reserve pits.

4. The reserve pit shall be lined with a leak resistant reinforced polyethylene liner as prescribed in the Gold Book. The liners shall be installed in accordance with the manufacturer's requirements on a surface covered with material that would not tear or puncture the liners.
5. If H₂S is encountered in excess of 100 ppm in the gas stream, the operator shall immediately ensure control of the well, suspend drilling ahead operations (unless detrimental to well control), and obtain materials and safety equipment to bring the operations into compliance with applicable provisions of Onshore Order No. 6. The operator shall notify the authorized officer of the event and the mitigating steps that have or are being taken as soon as possible, but no later than the next business day.
6. All pressure control equipment shall be in compliance with Onshore Order #2 for a 5M system.
7. Straw wattles shall be installed on all 3:1 or steeper slopes and drainages shall be restored to original grade.
8. Any variation from the approved route must be approved in advance by this office.
9. The operator is responsible for the suppression of any fires started as a result of operations. The contractor must have the necessary equipment, including fire extinguishers or water, to provide initial suppression of fire.

F. Interim Reclamation:

1. Interim reclamation shall occur within 6 months after completion of the well.
2. All disturbed areas not needed for production must be reclaimed and shall be scarified to a depth of 18 inches and re-contoured to the original contours with proper drainage established. Certified weed seed free mulch must be crimped into the soil at a rate of 1 ton per acre before seeding. All disturbed areas shall be seeded after October 1 (before ground freezes) or prior to May 15 (after ground thaws) at 6" drill row spacing at a depth of ¼" to ½" with the surface owner's preferred seed mixture on fee surface and BLM seed mix on federal surface (shown below). The seed mix shall be a certified weed-seed-free.
3. Interim reclamation shall be evaluated as a success if the area of disturbance is not needed for long-term operations are stabilized and re-contoured. Where all potential water erosion is effectively controlled and the vegetative stand is establish with at least 60% perennial native vegetation.

BLM Seed Mixtures

Combination must include at least four of the following species:

<u>Species</u>	<u>lbs/acre, pure live seed</u>
Western wheatgrass*	3.0
<i>Pascopyrum smithii</i> , variety Rosanna	
Green needlegrass	2.0
<i>Stipa viridula</i> , variety Lodom	
Slender wheatgrass	2.0
<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i> , variety Pryor	
Needleandthread	1.0
<i>Stipa comata</i>	
Bluebunch wheatgrass	2.0
<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i> , variety Goldar	
Sideoats Grama	2.0
<i>Bouteloua curtipendula</i>	
Little bluestem	2.0
<i>Schizachyrium scoparium</i>	

***Must be included in the mix. Thickspike wheatgrass may be substituted for wheatgrass only when western wheatgrass is unavailable.**

G. Pit reclamation:

1. The fluids from the pit shall be removed from the pit or the pit shall be netted at the conclusion of drilling operations. All pit(s) shall be emptied of all fluids within 90 days after well completion.
2. The pit shall not be cut or trenched.
3. The pit material shall be covered with a minimum of 3' of soil.

H. Final Reclamation:

1. A Sundry Notice shall be submitted to this office for Final Reclamation approval. The plan shall address the well sites and access roads.
2. The reclamation shall be evaluated as a success if the previously disturbed area is stabilized and character of land is to its pre-disturbance condition. Where all potential water erosion is effectively controlled and the vegetative stand is established with at least at 60% perennial native vegetation.
3. The well site and access road shall be re-contoured. Re-contoured areas shall be scarified, mulched and seeded. After scarification to a depth of 18 inches, topsoil must be spread evenly over the re-contoured area. Weed-free straw mulch must be then applied evenly over the re-contoured area at a rate of 1 ton per acre. The mulch must be crimped into the soil. The re-contoured area must then be seeded with a weed-seed-free seed mixture prescribed by the surface owner on fee surface, or with the seed mixture prescribed in the BLM Seed Mixture Table for

use on BLM Surface. All disturbed areas shall be seeded after October 1 (before ground freezes) or prior to May 15 (after ground thaws) at 6" drill row spacing at a depth of ¼" to ½" Seed must be drilled on the contour.

2. Verbal Notifications

The following notifications shall be made to the BLM, Miles City Field Office (MCFO) (406) 233-2800 during the hours of 7:45am – 4:30pm Monday-Friday, or after business hours to the appropriate individual's home phone shown on the list attached.

- A. Notify this office verbally at least 48 hours prior to beginning construction.
 - B. Notify this office verbally at least 12 hours prior to spudding the well (to be followed up in writing within 5 days).
 - C. Notify this office verbally at least 12 hours prior to running any casing or conducting any BOP tests (to be followed up in writing within 5 days).
 - D. Notify this office verbally at least 6 hours prior to commencing any DST test.
 - E. Notify this office verbally at least 24 hours prior to plugging the well to receive verbal plugging orders.
 - F. Notify this office verbally at least 24 hours prior to removal of fluids from the reserve pit.
3. A complete copy of the approved Application for Permit to Drill (APD), including conditions, stipulations, and the H2S contingency plan (if required) shall be available for reference at the well site during the construction and drilling phases. A copy of the approved Surface Use Plan of Operations and Conditions of Approval (COAs) shall be provided to the surface owner(s) prior to initiating construction.
4. This drilling permit is valid for either two years from the approval date or until lease expiration, whichever occurs first.
5. If any cultural values (sites, artifacts, human remains, etc.) are observed during operation of this lease/permit/right-of-way, work is to be stopped immediately and resources are to be left intact and the Miles City Field Manager notified. The authorized officer would conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they would be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is immediately to stop work that might further disturb such materials, and contact the authorized officer (AO). Within five working days, the AO would inform the operator as to:
- A. whether the materials appear eligible for the National Register of Historic Places;
 - B. the mitigation measures the operator would likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,

- C. a timeframe for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO may assume responsibility of identification, recordation and stabilization of the exposed materials or what may be required for mitigation. Otherwise the operator would be responsible for mitigation costs. The AO would provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator would then be allowed to resume construction.

If any cultural or paleontological resources are unearthed/discovered during the construction of the proposed Continental well locations and associated actions, the operator shall cease work immediately and contact the appropriate official at the Bureau of Land Management Miles City Field Office as soon as possible, 406-233-2800.

6. The Operator shall be responsible for control of noxious weeds occurring as a result of lease operations. The surface owner shall be responsible for approval of the weed control program on fee surface. The weed control program on BLM administered surface will require the approval of the Authorized Officer.
7. The abandonment marker shall exhibit the same information required for the well sign. The abandonment marker (steel plate welded to surface casing 4' below ground level) shall be installed when the well is plugged.
8. Additional requirements may be imposed if changes in operational and/or environmental conditions dictate.
9. This office shall be notified in writing if the well pad has been constructed but no drilling operations have been initiated within 6 months of the construction.

You have the right to request a State Director Review of this decision and these Conditions of Approval pursuant to 43 CFR 3165.3(b). An SDR request, including all supporting documentation must be filed with the Montana State Office, State Director (MT-920) at 5001 Southgate Drive, Billings, Montana 59101-4669 within 20 business days of your receipt of this decision. If adversely affected by the State Director's decision, it can be further appealed to the Interior Board of Land Appeals (IBLA) pursuant to 43 CFR 3165.4, 43 CFR 4.411, and 43 CFR 4.413. Should you fail to timely request an SDR, or after receiving the State Director's decision, fail to timely file an appeal with IBLA, no further administrative review of this decision would be possible.

INFORMATIONAL NOTICE

This is not a complete list of requirements, but is an abstract of some major requirements.

1. General Requirements

- a. The lessee or designated operator shall comply with applicable laws and regulations; with the lease terms, Onshore Oil and Gas Orders; NTL's; and with other orders and

instructions of the authorized officer. Any deviation from the terms of the approved APD require prior approval from BLM (43 CFR 3162.1(a)).

- b. If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease due to a lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligation determined by the authorized officer.

2. Drilling Operations (Onshore Order No. 2)

- a. If DST's are run, all applicable safety precautions outlined in Onshore Order No. 2 shall be observed.
- b. All indications of usable water (10,000 ppm or less TDS) shall be reported to the Miles City Field Office prior to running the next string of casing or before plugging orders are requested, whichever occurs first.

3. Well Abandonment (43 CFR 3162.3-4, Onshore Order No. 1 - Sec. V)

Approval for abandonment shall be obtained prior to beginning plugging operations. Initial approval for plugging operations may be verbal, but shall be followed-up in writing within 30 days. Subsequent and final abandonment notifications are required and shall be submitted on Sundry Notice (Form 3160-5), in triplicate.

4. Reports and Notifications (43 CFR 3162.4-1, 3162.4-3)

- a. Within 30 days of completion of the well as a dry hole or producer, a copy of all logs, core descriptions, core analyses, well-test data, geologic summaries, sample descriptions or data obtained and compiled during the drilling, workover, and/or completion operations shall be filed with a Completion Report (Form 3160-4), in duplicate.
- b. In accordance with 43 CFR 3162.4-3, this well shall be reported on the Oil and Gas Operations Report (OGOR, MMS-4054), starting with the month in which drilling operations commence, and continuing each month until the well is physically plugged and abandoned.
- c. Notify this office within 5 business days of production start-up if either of the following two conditions occur:
 - (1) The well is placed on production.
 - (2) The well resumes production after being off of production for more than 90 days. "Placed on production" means shipment or sales of hydrocarbons from temporary tanks, production into permanent facilities or measurement through permanent facilities.

Notification may be written or verbal with written follow-up within 15 days, and must include the following information:

- 1. Operator name, address, and telephone number.
- 2. Well name and number, county and state.
- 3. Well location, "1/4 1/4", Section, Township, Range, P.M."

4. Date well begins or resumes production.
 5. The nature of the well's production; that is crude oil, or crude oil casing gas, or natural gas and entrained liquid hydrocarbons.
 6. The Federal or Indian lease number.
 7. As appropriate, the Unit Agreement name, number and Participating Area name.
 8. As appropriate, the Communitization Agreement number.
- d. As per Onshore Order No. 6, A.2.b., the "operator shall initially test the H₂S concentration of the gas stream for each well or production facility..." Submit the results of this test within 30 days of filing Form 3160-4, "Well Completion or Recompletion Report and Log".
5. Environmental Obligations and Disposition of Production (43 CFR 3162.5-1, 3162.7-1 and 40 CFR 302-4)
- a. With BLM approval, water produced from newly completed wells may be temporarily stored in reserve pits up to 90 days. During this initial period, application for the permanent disposal method shall be made to this office in accordance with Onshore Order No. 7. If underground injection is proposed, an EPA or State permit shall also be obtained. If surface discharge of produced water is proposed, an MPDES permit shall also be required.
 - b. Spills, accidents, fires, injuries, blowout and other undesirable events shall be reported to this office within the timeframes in NTL-3A.
 - c. You are required to take all necessary steps to prevent any death of a migratory bird in pits or open vessels associated with the drilling, testing, completion, or production of this well. The death of any migratory bird found in such a pit or open vessel is a violation of the Migratory Bird Treaty Act and is considered a criminal act. Any deaths of migratory birds attributable to pits or open vessels associated with drilling, testing, completing or production operations must be reported to this office and the United States Fish and Wildlife Service within 24 hours.
- We may require that the pit be designed or the open vessel be covered to deter the entry of birds in any facility associated with drilling, testing, completion or production of this well. Fencing, screening and netting of pits may be required as a means to deter bird entry. These conditions would most likely be imposed to prevent the entry of migratory birds if oil is left in pits or open vessels after the cessation of drilling or completion of operations, if water disposal pits consistently receive oil, or if pits or open vessels are used repeatedly for emergency situations which result in the accumulation of oil.
- Voluntary pit fencing, screening and netting, or sealing vessels, is encouraged to avoid potential instances that may result in the death of a migratory bird.
- d. Gas produced from this well may not be vented or flared beyond an initial, authorized test period of 30 days or 50 MMCF following its completion, whichever first occurs, without the prior, written approval of the authorized officer. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well

until the gas can be captured or approval to continue the venting or flaring as uneconomic is granted, and you shall be required to compensate the lessor for that portion of the gas vented or flared without approval which is determined to have been avoidably lost.

6. Well Identification (43 CFR 3162.6)

Each drilling, producing or abandoned well shall be identified with the operator's name, the lease serial number, the well number, and the surveyed description of the well (either footages or the quarter-quarter section, the section, township and range). The Indian lessor's name may also be required. All markings shall be legible, and in a conspicuous place.

7. Site Security (43 CFR 3162.7.5)

- a. Oil storage facilities shall be clearly identified with a sign, and tanks must be individually identified (43 CFR 3162.6(c)).
- b. Site security plans shall be completed within 60 days of production startup (43 CFR 3162.7-5(c)).
- c. Site facility diagrams shall be filed in this office within 60 days after facilities are installed or modified (43 CFR 3162.7-5(d)(1)).

8. Public Availability of Information (43 CFR 3100.4)

All submitted information not marked "CONFIDENTIAL INFORMATION" will be available for public inspection upon request.

You have the right to request a State Director Review of this decision and these Conditions of Approval pursuant to 43 CFR 3165.3(b). An SDR request, including all supporting documentation must be filed with the Montana State Office, State Director (MT-920) at 5001 Southgate Drive, Billings, Montana 59101-4669 within 20 business days of your receipt of this decision. If adversely affected by the State Director's decision, it can be further appealed to the Interior Board of Land Appeals (IBLA) pursuant to 43 CFR 3165.4, 43 CFR 4.411, and 43 CFR 4.413. Should you fail to timely request an SDR, or after receiving the State Director's decision, fail to timely file an appeal with IBLA, no further administrative review of this decision will be possible.

Thank you for your cooperation. If you have any questions, please contact a member of our staff at 406-233-2800, or at home, after business hours as shown on the attached list.

Sincerely,



Todd D. Yeager
Field Manager
Miles City Field Office

BUREAU OF LAND MANAGEMENT, MILES CITY FIELD OFFICE
ADDRESS AND CONTACTS:

ADDRESS: 111 Garryowen Road, Miles City, Montana 59301
PHONE: (406) 233-2800
BUSINESS HOURS: 7:45 A.M. to 4:30 P.M. (Mountain Time)

<u>Title</u>	<u>Name</u>	<u>Home Phone</u>
Assistant Field Manager – Division of Mineral Resources	David Breisch	(406) 852-3511
Petroleum Engineer	Paul Helland	(406) 951-4550
Supervisor –Natural Resource Specialist	Dan Benoit	(406) 234-7153
Natural Resource Specialist	Jon David	(406) 234-9156
Natural Resource Specialist	Rick Lang Cell	(406) 232-6095 (406) 853-4105
Natural Resource Specialist	Dan Fox Cell	(406) 234-0209 (406) 853-4209
Natural Resource Specialist	Irma Nansel	(406) 234-8981
Petroleum Engineering Technician	Chris DeVault Cell	(406) 234-0784 (406) 853-3643
Petroleum Engineering Technician	Brian Nansel Cell	(406) 234-8981 (406) 853-2840
Petroleum Engineering Technician	Brian Hubbell Cell	(406) 234-1667 (406) 852-0078